

REMARKS

This case has been carefully reviewed and analyzed in view of the Office Action dated 10 May 2010. For the reasons set forth herein, reconsideration of the rejections made in that Office Action is respectfully requested.

Rejection Under 35 USC §112, First Paragraph

In the Office Action, the Examiner again rejected Claims 1, 4-5, 8-9, 15, 18-19, 22-23, 29, 31, and 34-35 under 35 USC §112, first paragraph, as failing to comply with the written description requirement, and for containing subject matter not adequately described in the specification to reasonably convey possession of the claimed invention. The Examiner recognized that the Claims as now amended recite the common frequency which is adjusted for to be in at least one of the system's first transceiver units a carrier frequency, and in a different one of the system's first transceiver units a sampling frequency. Nonetheless, the Examiner concluded that the application "never discloses how the carrier frequency and sampling frequency are detected and adjusted together by a plurality of transceiver units," (Office Action, page 3, lines 1-3).

This is in direct contradiction to the Board's express findings of fact and ruling in this regard. As the Board's Decision on Appeal states at pages 5-6, the following are amongst the Board's "Findings of Fact (FF) ... shown by a preponderance of the evidence:"

4. The Specification discloses adjusting the common carrier and sampling frequencies...

5. The Specification discloses correcting errors in the carrier frequency and sampling frequency...

...

8. The Specification teaches **both** carrier frequency offset correction and sampling frequency offset correction...

(Decision, page 6; *emphasis added*).

The Board when on to rule that “[a]lthough the Examiner finds both a failure to meet the written description and enablement requirements, we find rather that the claims **do** meet the written description requirement,” (Decision, page 10, line 25 – page 11, line 1; *emphasis added*), and maintained the Examiner’s rejection on just the enablement requirement. The Board was satisfied with reference to the Specification that individual “remote units 100 may contain a receiver that *either* corrects for carrier frequency offset *or* sampling frequency offset,” (Decision, page 11, lines 13-14). In fact, the Board explicitly noted: “We find that the Specification describes the claimed limitations” in this regard (Decision, page 11, lines 6-7). The Board even noted in reversing the 35 U.S.C. §112, second paragraph, rejection (discussed more fully below): “We do not agree with the Examiner’s position” - that “it is improper to combine these two different embodiments [for receivers within the individual remote units 100] together in a single claim,” (Decision, page 12, line 13; page 11, lines 23-24).

The Board's only concern was how the corrections could be implemented *together at the same time* in the same receiver of an individual remote unit 100. Clearly, the Board found the use of either type of frequency correction in different remote units disclosed, and therefore sufficiently supported, by the Specification. Each of the independent Claims, as last amended, recite "a plurality of first transceiver units" remotely disposed from a "second transceiver unit." It is "in at least one" of these remote first transceiver units that carrier frequency is adjusted for, while "in at least one other," or altogether different remote first transceiver unit that a sampling frequency is adjusted for. As the Board found, there is ample disclosure of this in the Specification. Indeed, FIG. 1 of the subject Patent Application illustrates a typical embodiment where a plurality of remote units 100-1, 100-2, ...100-n may be thus employed. Withdrawal of this rejection in compliance with the Board's Decision is respectfully requested.

Rejection Under 35 USC §112, Second Paragraph

Also in the Office Action, the Examiner reasserted the rejection of Claims 1, 4-5, 8-9, 15, 18-19, 22-23, 29, 31, and 34-35 under 35 USC §112, second paragraph, for failing to clearly set forth the subject matter regarded as the invention. The Examiner observed that the Claims, as last amended, incorporate "a first embodiment for digital correction of carrier frequency offsets," as well as "a second preferred embodiment for digital correction of sampling frequency

offset.” The Examiner then went on to conclude as before that “[t]hese two different embodiments are improper to combine together in a single claim.” (Office Action, page 3, paragraph 4).

As noted above, the Board squarely addressed and reversed this very position of the Examiner that “it is improper to combine these two different embodiments together in a single claim.” (Decision, page 11, lines 22-24). The Board found “error in the Examiner’s rejection,” stating in no uncertain terms that “we do not agree with the Examiner’s position.” (Decision, page 12, lines 13-15). Withdrawal of this rejection in compliance with the Board’s Decision is respectfully requested.

Rejections Under 35 USC §102(e) and 103(a)

Further in the Office Action, the Examiner reasserted rejections based on references earlier cited and overcome in this case. Presumably, such art rejections reflect a lack of full effect accorded to the Claims’ recitations in light of the 35 U.S.C. §112 rejections addressed above.

In any event, the Examiner rejected Claims 1, 4-5, 8, 15, 18-19, 22, 34, and 35 under 35 U.S.C. §102(e) as being unpatentable over the Knutson, et al. reference. The Examiner additionally rejected Claim 29 under 35 U.S.C. §103(a) as being unpatentable over Knutson, et al. in view of the Jones, et al. reference. In setting forth the latter rejection, the Examiner acknowledged that Knutson, et al.

fails to specifically disclose the use of a frequency locked loop (FLL), but cited Jones, et al. for disclosing this feature. The Examiner concluded that it would have been obvious to one of ordinary skill in the art to have incorporated as much into the Knutson, et al. system.

The Examiner set forth the following additional rejections under 35 U.S.C. §103(a):

- Claim 31 as being unpatentable over Knutson, et al. in view of Jones, et al., further in view of the Evans, et al. reference; and,
- Claims 9 and 23 as being unpatentable over Knutson, et al. in view of Evans, et al.

In setting forth these rejections, the Examiner cited Evans, et al. for disclosing the use of a crystal oscillator to supply a reference frequency for modulation, a variably adjustable device, and adjustment of the reference frequency in accordance with an offset signal to correct error. The Examiner concluded in each case that it would have been obvious to one of ordinary skill in the art to have combined the features with those of the other reference(s) cited.

As the pending independent Claims each clearly recite, Applicants' approach includes among its features the use of a certain "common frequency" in each of "a plurality of first transceiver units" for communication with "a second transceiver unit disposed remotely therefrom." The approach further includes adjusting the common frequency in each of the first transceiver units according to

a comparative offset between the common frequency references respectively used locally at that particular first transceiver unit and at the second transceiver unit with which it communicates. As each of the independent Claims recites, such adjustment of the common frequency in a given first transceiver substantially reduces “the effects ... of the offsets to be perceived,” and does so “in preemptive manner.” The independent Claims further recite that this common frequency adjusted “in at least one” of the “plurality of first transceiver units” is a “carrier frequency,” while in a different, or “other of the first transceiver units” it is a “sampling frequency.”

The full combinations of these and other features as recited in the pending Claims are nowhere disclosed by the cited references. As earlier noted, while the primarily-cited Knutson et al. reference applies a prerotation to a transmitted signal for addressing an offset in a carrier frequency, phase and other errors remain locally “tracked” at each handset (Column 5, line 26). No provision is made in any of the handsets to obtain and preemptively transmit offset information for these other errors, such as for any errors in sampling frequency, in the manner claimed. The blocks 227 and 229 of FIG. 2 which the Examiner relied upon in this regard represent a receiver CTL/NCO (carrier tracking loop/numerically-controlled oscillator) 227 and a transmitter prerotator 229 – both of which serve in addressing just the carrier offset.

Given such deficient and contrary teachings of the primarily-cited Knutson, et al. reference, the disclosures of the secondarily-cited Jones, et al. and Evans, et al. references are found to be ineffectual to the present patentability analysis. These references were cited for disclosing certain isolated features. They neither disclose nor even suggest such features as the preemptive reduction of sampling frequency and carrier frequency offsets in the manner claimed at respective ones of a plurality of transceiver units.

Thus, it is respectfully submitted that the cited Knutson, et al., Jones, et al., and Evans, et al. references, even when taken together, fail to disclose the unique combination of features clearly recited by Applicants' pending Claims for the purposes and objectives disclosed in the subject Application.

It is believed that the subject Patent Application remains in condition for allowance, and such action is respectfully requested.

No fees are believed due with this filing. If there are any fees associated with the filing, the Honorable Commissioner for Patents is hereby authorized to charge Deposit Account #18-2011 for such fees.

Respectfully submitted,
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2. Did Appellants show that the Examiner erred in finding that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter that Appellants regard as their invention?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, the invention concerns a digital communication system composed of at least two transceivers, one serving as a transmitter and the other as a receiver, wherein the receiver detects either the carrier frequency offset or the sampling frequency offset of the incoming signal and the transmitter corrects the carrier frequency offset or the sampling frequency offset (Figs. 1-5, Spec 1:7-10, 7:5-17, 8:8-12, 10:3-9, 10:16-19, and 11:16-21). Specifically, the Specification discloses a first embodiment of a receiver within remote unit 100 that detects carrier frequency offset and a second embodiment of a receiver within remote unit 100 that detects sampling frequency offset (Figs. 2 and 4, Spec. 8:8-9 and 10:16-17).

2. The Specification discloses that the digital communication system includes a base station and multiple remote units 100, wherein each remote unit 100 corrects the frequency offset during transmission, creating a low IF modulation and interpolation effect (Fig. 1, Spec. 7:13-17).

3. The Specification discloses using a common carrier frequency and a common sampling frequency (Fig. 1, Spec. 5:10-17, 7:5-8, and 17:20-18:4).

4. The Specification discloses adjusting the common carrier and sampling frequencies (Spec. 10:3-9, 11:18-12:6, 12:22-13:10, and 17:15-19).

5. The Specification discloses correcting errors in the carrier frequency and sampling frequency (Spec. 10:3-9, 11:18-12:6, 12:22-13:10, and 17:15-19).

6. The Specification discloses a frequency lock loop and a delay lock loop (Spec. 8:8-15, 11:10-11, 12:18-22, 14:14-15, 14:19-21, 15:18-20, and 16:2-5).

7. The Specification discloses a frequency shift block and a timing acquisition unit (Spec. 10:3-9, 11:18-12:6, 12:22-13:10, and 17:15-19).

8. The Specification teaches both carrier frequency offset correction and sampling frequency offset correction (Abstract, Spec. 1:7-10, 3:21-4:4, 18:10-13, and 18:16-19).

PRINCIPLES OF LAW

Under the written description requirement of 35 U.S.C. § 112, the disclosure of the application relied upon must reasonably convey to one of ordinary skill in the art that, as of the filing date of the application, the inventor had possession of the later-claimed subject matter. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). "One shows that one is 'in possession' of *the invention* by describing *the invention*, with all its claimed limitations, not that which makes it obvious." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (emphasis in original).

Although "the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification." *Id.* The

the term "embodiment" has no implicit relationship to mutual exclusivity and such relationship cannot be arbitrarily read into the term (App. Br. 21). Finally, Appellants contend that throughout the entire original Specification there are several references to both carrier frequency offset correction and sampling frequency offset correction (App. Br. 19 and 21, FF 8, and Abstract).

The Examiner finds that claims 1, 4, 5, 8, 9, 15, 18, 19, 22, 23, 29, 31, 34, and 35 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph, since the claim limitations of "using a common carrier frequency and a common sampling frequency," "adjusting the common carrier and sampling frequencies," "correct for errors in the carrier frequency and sampling frequency," "a frequency lock loop and a delay lock loop," and "a frequency shift block and a timing acquisition unit" were not found in the original disclosure and therefore are considered new matter (Ans. 3).

The Examiner finds further that claims 1, 4, 5, 8, 9, 15, 18, 19, 22, 23, 29, 31, 34, and 35 implicitly lack enablement because the Specification fails to *describe how* the "carrier frequency offset and sampling frequency offset" are corrected together as independent claims 1, 15, 29, 31, 34, and 35 require (Ans. 6). In the Examiner's view, the absence of support for the carrier frequency offset and sampling frequency offset correction occurring together at the same time in the Specification or in the drawings indicates that Appellants did not have possession of the invention as of the filing date (Ans. 3 and 5).

Although the Examiner finds both a failure to meet the written description and enablement requirements, we find rather that the claims do

meet the written description requirement, but do not meet the enablement requirement under 35 U. S. C. 112, first paragraph. Specifically, in order to satisfy the written description requirement, one must show "that one is 'in possession' of *the invention* by describing *the invention*, with all its claimed limitations." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). We find that the Specification describes the claimed limitations. We agree with the Examiner, however, that the absence of support for the carrier frequency offset and sampling frequency offset correction *occurring together at the same time* in the Specification or in the drawings indicates that Appellants have not met the enablement requirement (Ans. 3 and 5). We did not find any disclosure in the Specification or the drawings of *how* these could be implemented together other than that the remote unit 100 may contain a receiver that *either* corrects for carrier frequency offset *or* sampling frequency offset but not *both, simultaneously*.

Therefore, we do not find error in the Examiner's rejection of claims 1, 4, 5, 8, 9, 15, 18, 19, 22, 23, 29, 31, 34, and 35 under 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 112 rejection, second paragraph

With regard to claim 1, the Examiner finds that the original Specification clearly sets forth a first embodiment for digital correction of carrier frequency offset (Ans. 4, FF 1) and a second embodiment for sampling frequency offset (Ans. 4, FF 1). Hence, the Examiner finds that claim 1 is indefinite because it is improper to combine these two different embodiments together in a single claim (Ans. 4).

Appellants argue that the claimed carrier frequency offset correction and sampling frequency offset correction are explicitly shown in the Specification and drawings (App. Br. 24-25).

When determining whether a claim is indefinite, the Examiner must look to the Specification to determine whether the terms of the claim can be given any reasonable meaning by those skilled in the art “when the claim is read in light of the Specification” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). The Examiner must find ambiguity between the claimed features and that which is disclosed in the Specification to come to a conclusion of indefiniteness. We agree with the Appellants. We do not find any ambiguity in the claim language when read in light of the Specification and thus, we do not agree with the Examiner’s position.

Therefore, because Appellants have shown error in the Examiner’s rejection of claims 1, 4, 5, 8, 9, 15, 18, 19, 22, 23, 29, 31, 34, and 35 under 35 U.S.C. § 112, second paragraph, we hereby reverse the Examiner’s rejection.

CONCLUSIONS OF LAW

Appellants have not shown that the Examiner erred in finding that the original Specification fails to describe how the “carrier frequency offset and sampling frequency offset” are corrected simultaneously.

Appellants have shown that the Examiner erred in finding that the claims are indefinite for failing to particularly point out and distinctly claim the subject matter which the Appellants regards as their invention.